specimens from the following collections: K. Pr. Geol. Landesanstalt, Berlin; Städt. Museum, Chemnitz; Naturw. Museum, Dortmund; K. K. Geol. Reichsanstalt, Wien; Märkisches Museum, Witten; Museum, Osnabrück; s'Rijks Herbarium, Leiden; Geol. Institut der Universität, Göttingen; Geol. Institut der Bergakademie, Clausthal; and Geol. Institut der Universität, Münster i.W.

The work is strictly taxonomic. The descriptions and synonomy are very complete, and the magnificent plates enable one to study the subject almost as well as if he had the actual specimens in his hands.—CHARLES J. CHAMBERLAIN.

Anatomy of petioles of Cycads.—LE GOC[17] has studied the debated xylem situation in the foliar bundles of the cycads. As is well known, both centripetal and centrifugal xylem occur, a situation which has been variously interpreted, but in general the bundle has been spoken of as mesarch. LE GOC has found that at the very base of the petioles in cycads the xylem is entirely centrifugal, and that later the bundles assume different forms, becoming concentric, collateral, or a combination of these two arrangements. He regards the centrifugal xylem at the base as a secondary growth, and the centripetal xylem which appears later as a primary structure, laid down early, but only gradually lignified. The two xylems he thinks are probably distinct in origin, appearing in response to "physiological demands but morphologically discontinuous." During most of the course of the bundles along the petiole the two xylems remain distinct, and therefore he would suggest that the bundle is more properly called "pseudo-mesarch."—J. M. C.

The origin of the "eye spot."—From a study of the literature, without any apparent study of the structures themselves, ROTHERT[18] comes to the conclusion that the "eye spot" of flagellates and algae is derived from a plastid. The evidence seemed clear already, so far as the Euglenaceae are concerned, and GUIGNARD, as long ago as 1889, claimed that the "eye spot" seen in the sperms of *Fucus* arose from a colorless plastid. ROTHERT overlooks entirely the various papers by YAMANOUCHI from 1909 to 1913, particularly the paper on *Cutleria*,[19] in which the origin and development of the "eye spot" are described in detail.—C. J. CHAMBERLAIN.

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[17] LE GOC, M. J., Observations on the centripetal and centrifugal xylems in the petioles of cycads. Ann. Botany **28**:183–193. *pl. 11. fig. 1.* 1914.

[18] ROTHERT, WLADISLAW, Der "Augenfleck" der Algen und Flagellaten ein Chromoplast. Ber Deutsch. Bot. Gesells. **32**:91–96. 1914.

[19] YAMANOUCHI, SHIGÉO, The life history of *Cutleria*. BOT. GAZ. **54**:441–502. *figs. 16. pls. 26–45.* 1912.